

Physiotherapeutic approach in a patient with breast carcinoma – A case report

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ABSTRACT

Breast carcinoma is one of the most serious illnesses in females and a significant cause of mortality and morbidity. A variety of treatment programs has now been developed to help with the restoration of shoulder movement while also lowering the occurrence of subsequent lymphedema. Modified radical mastectomy has several advantages, including local cancer management and a lower chance of cancer recurrence, as well as the preservation of the chest muscles, which prevents deformity and allows patients to undergo breast reconstruction. Lymphedema can cause cosmetic issues, functional difficulties, and psychological anguish in breast cancer patients, all of which can reduce the quality of life. Females who receive quick breast reconstruction have a lower risk of depression and have a higher standard of life. For females who have had breast cancer, physiotherapy can assist to reduce pain, restore shoulder mobility, and enhance the quality of life.

Keywords: Physiotherapeutic approach, breast carcinoma, modified radical mastectomy, Shoulder Pain

1. INTRODUCTION

Cancer is a term used to describe a group of disorders in which abnormal cells divide uncontrollably and spread to other organs. It's a type of cancer that starts in the inner layer of the milk ducts or the lobules that feed the ducts with milk. As a result of role constraints caused by physical and emotional problems, young and active patients may find it difficult to return to ordinary daily life activities (Gaur et al., 2021). Breast cancer detection and diagnosis have greatly improved. This is one of the most common cancers in Indian women, affecting around 80,000 people per year (Giacalone et al., 2019). Upper limb soreness and joint dysfunction are the most common adverse effects, with pain occurring in 12 percent to 51 percent of cases and joint dysfunction occurring in 1.5 percent to 50 percent of cases. This is most likely due to the client's physical health problems, low socioeconomic status, non-caucasian race, and, eventually, low quality of life rating. Even with moderate daily exercise, the majority of breast cancer patients have immediate post-operative discomfort.

As a result of lymphatic system inefficiencies, lymphoma is described as an excessive and long-term deposition of fluid and extravascular and extracellular proteins in tissue spaces (Leal et al., 2009). Sensory difficulties in the hand and restricted use of the extremities for functional duties are all symptoms of lymphedema (Shamley et al., 2005). As a result, we must immediately improve rehabilitative therapy following breast cancer surgery (Naqvi, 2021). They give strength to people who want to improve their physical ability (Cinar et al., 2008). Exercise is prescribed by physical therapists as a part of a safe and effective program for physically and intellectually challenged people. Prevention, early identification, and quick treatment of shoulder difficulties in post-mastectomy patients are critical to minimizing human and financial suffering. Patients who have had a mastectomy have been found to have UL deficits and a worse quality of life. Breast loss produces soft tissue asymmetry and mass distribution through the chest wall, affecting upper-limb movements and resulting in trunk and shoulder discomfort (Shamley et al., 2005).

2. CASE DESCRIPTION

A 58-year-old female housewife from Chandrapur district complained of pain and a lump in her right breast that started small but grew in size until it reached the size of 7x6 cm, which was located in the nipple-areolar region. The lump was also piercingly painful, with a VAS severity of 7/10. No family history is significant. 25 years ago, the patient had tubal ligation surgery. With these complaints, she went to AVBRH for investigations, which included USG, CBC, LFT, KFT, and RBS tests. Numerous foci of calcification with core vascularity encompass about 15.9 x 12.4 mm in the low inner quadrant of the right breast, posterior to the nipple-areolar region, and are well-defined heterogeneous hypoechoic lesions with irregular edges.

On elastography, the OB doppler lesions are stiff, and there is a 7 x 6 mm enlarged USG lymph node in the right axilla with an intact hilum. A malignant tumor in the right breast is pictured. In a supine posture, the patient's shoulders were at the same level. Vitals were recorded as normal. There was no sign of infection at the incision site, which was blue-purple. The pain was recorded using a numerical pain rating scale (NPRS), with the patient scoring 3/10 at rest and 8/10 when the affected shoulder was moved above 70 degrees. Both active and passive range of motion was assessed using a goniometer as mentioned in (Table 1). There is a limitation in right shoulder ROM. Manual muscle testing (MMT) was performed on both sides' upper limb muscles given in (Table 1). Girth measurement was done on both upper limbs to assess any swelling.

Timeline of the current episode

The old female was diagnosed with breast cancer on 08/10/2021 then, they planned for the surgery on 10/10/2021 for modified radical mastectomy, and then the physiotherapy rehabilitation was started on 11/10/2021 and the patient was discharged on 07/11/2021.

Diagnosis

The diagnosis was confirmed as Modified radical mastectomy Rt. Side (Figure 1).



Figure 1 Showing Right side Modified Radical Mastectomy.

Physiotherapy intervention

The treatment started with patient education about pain relief, shoulder ROM Improvement are mentioned in (Table 1 and Figure 2), improvement in Muscle Strength are given in (Table 1) a Home exercise program and prevention steps. The goal of the treatment included maintaining shoulder ROM, chest movements, and making the patient use of limbs.



Figure 2 Showing Post-Rehabilitation increase in Shoulder flexion and Shoulder abduction.

Table 1 follow up and outcome

PARAMETER		2 nd Week	4 th Week	6 th Weeks	12 th Weeks
PAIN (NPRS)	On Rest	4/10	3/10	2/10	No pain
	On Movement	7/10	5/10	4/10	2/10
Active Shoulder ROM (AFFECTED LIMB)	Flexion	115	130	150	175
	Abduction	105	145	160	170
	Internal rotation	40	55	70	85
	External rotation	45	50	65	67
MMT (AFFECTED LIMB)	Flexion	2/5	3/5	4/5	4/5
	Abduction	2/5	3/5	4/5	4/5
	Internal rotation	2/5	3/5	4/5	5/5
	External rotation	2/5	3/5	4/5	5/5

The rehabilitation program included patient education, breathing exercises, relaxation exercises, stretching of neck muscles, and shoulder range of motion exercises. The patient underwent 15 physiotherapy sessions after the drains were removed, which included pendulum motions, wall climbing, overhead lifting pulley, and horizontal abduction. Begin with functional exercises and work your way up to active and action-assisted shoulder workouts. Resistance and non-resistance PNF routines are available. Throughout the subacute stage, the rotator cuff, serratus anterior, upper trapezius, biceps femoris, and pectoralis all require significant re-enforcement, and exercises were started with a stick or cane. Asking the patient to hold a cane or stick with both hands and slowly raise the wand above the head with the elbow straight. Hot packs were applied for 10-15 min. Each session she was started with a warm-up for 10 minutes followed by exercise protocol and the cool-down phase.

Within 6 weeks strengthening exercises were started with assistance followed by resistance exercises with elastic bands, and weight cuffs. The best technique is, to begin with, more repetitions and less resistance, gradually increasing resistance and lower repetitions. Patients may also benefit from lower-body workouts such as longer walks, stationary biking, and/or low-impact aerobics (Morimoto et al., 2003). The patient's home exercise program was introduced at the third visit, to improve her Upper Extremity and thoracic mobility. To develop thoracic mobility, Upper Extremity ROM, and tolerance for varied overhead postures, she practiced various yoga positions with thoracic mobilization and Upper Extremity stretches using a foam roller parallel to the thoracic spine daily. For between-session management, the patient completed the home exercise regimen independently at home.

Result

Improvements in shoulder mobility were seen in the transition from assisted to active movements. The patient was independent and could perform her activities with minimal supervision. Her NPRS score also improved after physiotherapy intervention.

3. DISCUSSION

Shoulder joint ROM restriction, functional capacity decline, and lymphedema are the most prevalent post complications of MRM. When to begin a rehabilitation program after breast surgery is disputed. In oncologic patients, muscle dysfunction and sarcopenia have been linked to poor performance increased mortality risk, and more adverse effects (Mehta et al., 2017). Early medical rehabilitation on the 2nd-4th day after surgery has been found to help reduce pain syndrome and postoperative edema, enhance shoulder joint motions, prevent severe lymphocytosis, and improve life quality in patients who have had a radical mastectomy (Blomqvist et al., 2004). This event illustrates the need for an early rehabilitation program; early rehabilitation after MRM increases shoulder mobility and functional ability without negatively impacting the postoperative period (Gaur et al., 2021).

Patients suffering from breast cancer must always be referred to a physical medicine and rehabilitation specialist, according to clinicians. Dance movement therapy is a psychosocial movement-based technique that blends dance movement therapy and group psychotherapy. It helps patients express themselves more freely, accept and reconnect with their bodies, cope with despair and terror, restore shattered self-confidence, and increase personal resources. They can express their emotions and worries, as well as coping skills, with others in a group setting. Patients should be regularly monitored during the postoperative phase to ensure that they adapt and comply with the early onset exercise regimen.

4. CONCLUSION

In a modified radical mastectomy, Females who receive quick breast reconstruction have a lower risk of depression and have a higher standard of life. For females who have had breast cancer, physiotherapy can assist to reduce pain, restore shoulder mobility, and enhance the quality of life.

Author's contribution

MB, SP, and PD made the best contribution to the concept, assessment and evaluation, data acquisition and analysis, and interpretation of the data.

Informed consent

The consent was obtained from the patient to prepare the case report.

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Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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